

Environment and energy topics at a glance

Climate change and global warming

Climate change and global warming are important environmental issues. This information sheet describes what the issues are and what you can do to help.

Climate change refers to a wide range of changes in global temperatures and weather patterns resulting from the greenhouse effect and global warming.

The greenhouse effect is the natural process that heats the earth and thereby supports life on earth. Heat from the sun is trapped by certain gases in the atmosphere, called greenhouse gases. The greenhouse effect allows some heat to escape into space but traps enough to keep the earth warm day and night.

Global warming refers to the expected warming of the earth due to an increase — caused by human activities — in the level of greenhouse gases in the atmosphere.

The effects of climate change

Researchers expect that as the level of greenhouse gases increases, the greenhouse effect will be more intense and the earth will gradually be warmed.

In Canada, more warm weather may sound like a good idea. However, scientists agree that there are serious environmental and economic implications to warming global temperatures.

Serious effects are expected both globally and at home:

Heat waves

Prolonged periods of high temperatures are likely to become more common.

Storms

Frequency and intensity of severe weather may increase.

Changes in precipitation

Increases or decreases in rain and snow in some areas may increase droughts or flooding. In central North America, climate change is expected to lead to less precipitation. Water supplies for drinking, shipping and hydro power generation may be affected.

Sea level rise

Ocean levels are projected to rise due to the expansion of water as it warms and the melting of ice on land. This may cause flooding in low-lying countries such as Holland. Coastal communities such as those on Hudson's and James Bay may experience erosion, wetland loss and salt water intruding into freshwater systems.

Pests

Locusts, aphids and moths become more active in warmer weather and may migrate north.

Health problems

Climate change may affect the health of Canadians through such factors as greater heat stress and increases in mold and fungi. The effects are likely to be greatest on elderly, chronically ill and very young people. Tropical diseases such as malaria are expected to shift north.

Greenhouse gases

In Ontario, the main greenhouse gases released by human activities are:

Carbon dioxide (CO₂)

The main greenhouse gas, carbon dioxide, comes primarily from the burning of fossil fuels, such as oil, coal and natural gas, and makes up about 81 per cent of Ontario's greenhouse gas emissions.

Methane (CH₄)

Methane is released as gas leaks from landfills, as emissions from agricultural activities and during the production, transmission and use of natural gas. It accounts for about 13 per cent of Ontario's greenhouse gas emissions.

Nitrous oxide (N₂O)

N₂O is formed during the combustion of fossil fuels but its principal sources, as a result of human activity in Ontario, are nitrogen fertilizers and the manufacture of nylon. Nitrous oxide accounts for about six per cent of Ontario's greenhouse gas emissions.

A world-wide effort to prevent climate change

Canada was one of more than 150 countries to sign the Framework Convention on Climate Change at the United Nations Conference on Environment and Development in Rio de Janeiro in June 1992. This agreement sets an initial aim for developed countries to return greenhouse gas emissions to 1990 levels by the year 2000.

In February 1995, Canada's federal, provincial and territorial ministers of environment and energy approved the National Action Program on Climate Change. The program sets out a broad framework under which Canada is working toward stabilizing national greenhouse gas emissions at 1990 levels by the year 2000. This framework will also provide guidance for addressing emissions after that date.

International negotiations are underway for future commitments on climate change.

Ontario achievements

Energy-efficiency measures make a major contribution to the reduction of greenhouse gas emissions. Ontario was the first province to introduce energy efficiency regulations on energy-using products and appliances. Minimum performance standards for energy efficiency have been set for more than 40 categories of products and appliances. The Ministry of Environment and Energy has also worked with industry to promote energy conservation measures and practices.

The Voluntary Challenge Program and Registry, launched under the National Action Program, is encouraging all sectors to take cost-effective voluntary actions to reduce greenhouse gas emissions. More than 240 Ontario companies have registered with the program.

In May 1996, the Ministry of Environment and Energy submitted an Action Plan to the Voluntary Challenge and Registry Program that committed to reduce emissions from Ontario government operations by 40 per cent from 1990 levels by the year 2000. The plan outlines the measures underway to reduce greenhouse gas emissions from government buildings and vehicles. Substantial reductions have already been achieved.

Further actions are being implemented by governments, industries and businesses.

How you can help

There are several things you can do to help reduce greenhouse gas emissions:

Conserve energy

Turn off lights and appliances when not in use. Buy energy-efficient goods and appliances. Walk, bicycle or use public transit instead of driving. If you must drive, keep your car well tuned and your tires properly inflated. Caulk and weather-strip your home and check its level of insulation.

Reduce, reuse and recycle

The 3Rs of waste management help save energy by reducing the need to manufacture products from scratch and by easing the stress on methane-producing landfill sites.

Use your consumer power

Buy environmentally friendly goods. Look for items that are energy-efficient, reusable, recyclable, made from recycled materials and not over-packaged. If environmentally friendly goods are not available at your store, you can always ask that they be stocked.

Plant trees

Trees absorb and store carbon dioxide. If properly placed, trees can naturally reduce heating and cooling needs by sheltering homes from wind and sun.

Educate yourself

Read articles. Get information on climate change and energy efficiency available from your public library, utility companies, government and other sources.

For more information on climate change and global warming, energy conservation, air pollution and other topics, please contact:

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